USSR

ALESHKYAVICHENYE, A. K.

"Local Theorems for Time to First Arrival in a Random Walk"

Lit. mat. sb. [Lithuanian Mathematics Collection], Vol 11, No 3, 1971, pp 477-496, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V31 by the author).

Translation: Suppose there is a sequence ξ_1, $1 = 1, 2, \ldots$, of independent, identically distributed random quantities with nondegenerate distribution function $F(x)$. We represent

$$a = M\xi_1, \quad \sigma^2 = D\xi_1,$$

$$S_0 = 0, \quad S_n = \sum_{l=1}^{n} \xi_l, \quad n = 1, 2, \ldots, \quad S_n^* = \max_{1 \le l \le n} S_l,$$

$$n = 1, 2, \ldots,$$

$$N(x) = \max\{n : S_n^* < x\}.$$

The basic result of this article is proof of the following statement: if $a > 0$ and $M|\xi_1|^3 < \infty$, then where $n \to \infty$

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USSR

ALESHKYAVICHENE, A. K., Lit. Mat. Sb., 1973, Vol 13, No 2, pp 2-21

evenly relative to $m(-\infty<m<\infty)$;

2) if a = 0, then for $0<\varepsilon<m<\infty$

$$\sigma\sqrt{n}\,P_n(m)-\sqrt{\frac{2}{\pi}}\,e^{-\frac{x_{nm}^2}{2}}=$$

$$=O\left(\frac{\beta_3^2}{\sigma^6\sqrt{n}}+\frac{\beta_3}{\sigma^3 m}+\frac{\beta_3^2}{\sigma^6 m x_{nm}}+\frac{1}{c^2 m}+\frac{n}{m}e^{-\frac{c}{2}m}\right).$$

Here c>0 and the constant in symbol O is absolute.

Author's view

2/2

USSR

ALESHKYAVICHENE, A. K.

"Local Theorems for the Maximum of Sums of Independent, Identically Distributed Random Quantities"

Lit. Mat. Sb. [Lithuanian Mathematics Journal], 1973, Vol 13, No 2, pp 2-21 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V55)

Translation: Suppose $\{\xi_l\}$, $l = 1, 2, \ldots$, is a sequence of identically distributed, reticular random quantities. Let us represent

$$a = M\xi_l, \quad \sigma^2 = D\xi_l, \quad \beta_3 = M|\xi_l - a|^3,$$

$$S_n = \sum_{l=1}^{n} \xi_l, \quad n = 1, 2, \ldots, \quad \overline{S}_n = \max_{1 \le k \le n} S_k, \quad P_n(m) =$$

$$= P\{S_n = m\}, \quad x_{nm} = \frac{m - an}{\sigma\sqrt{n}}.$$

This work proves the following statement. If random quantities are reticular with a maximum distribution step of 1, $\beta_3 < \infty$ and

1) if $a > 0$, then

$$\sigma\sqrt{n}\,P_n(m) - \frac{1}{\sqrt{2\pi}} e^{-\frac{x_{nm}^2}{2}} =$$

$$= O\left(\frac{\beta_3}{\sigma^3\sqrt{n}} + \frac{1}{a^2\sqrt{n}} + \frac{1}{ca^2 n} + \frac{\sqrt{n}}{a^2} e^{-\frac{cn}{2}}\right)$$

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USSR UDC: 519.218

ALESHKYAVICHENE, A.

"Some Limit Theorems for Restitution Processes"

Lit. mat. sb. (Lithuanian Mathematics Collection), 1971, 11, No 1, pp 39-58 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V203)

Translation: The paper investigates: 1) limit distributions with different refinements (asymptotic expansion in integral and local limit theorems, integral and local limit theorems with regard to large deviations) of the process $N(t)$ when $t \to \infty$ and random quantities ξ_j belong to the region of attraction of the normal law; 2) asymptotic behavior of the moments and semi-invariants of the process $N(t)$ as $t \to \infty$; 3) limiting distribution of the sums $\sum_{i=1}^{n} N_i(t)$ of independent identically distributed restitution processes when $t \to \infty$ and $n \to \infty$. Author's abstract.

1/1

USSR

UDC: 519.2

ALESHKYAVICHENE, A.

"Asymptotic Expansions for a Generalized Restitution Process"

Lit. mat. sb. (Lithuanian Mathematics Collection), 1972, 12, No 1, pp 5-21 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V42 [author's abstract])

Translation: Let there be a sequence $\xi_1, \xi_2, \ldots$ of independent identically distributed random quantities with nondegenerate distribution function. Let

$$a = M\xi_1, \sigma^2 = D\xi_1, S_0 = 0, S_n = \sum_{i=1}^{n} \xi_i, n = 1, 2, \ldots,$$

$$\bar{S}_n = \max_{i \le n} S_i, n = 1, 2, \ldots, F_n(x) = P\{S_n < x\},$$

$$N(x) = \max\{n : S_n < x\}.$$

In this paper, asymptotic expansions are found for the probabilities $P\{N(x) = n\}$ and for the distribution functions $F_n(x\sigma\sqrt{n} + an)$ as $n \to \infty$ in the case where $a > 0$.

1/1

USSR

VAL'KOV, V. D., et al, Korroziya i zashchita met. (Metal Corrosion and Protection -- Collection of Works), Moscow, "Nauka," 1970, pp 75-83 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 1796 by authors)

as well as by a number of technological factors: high cooling rates during casting, manufacture of sheet from extruded strips, rolling after hardening (up ~50%). Four illustrations. One table. Bibliography of 26 titles.

2/2

USSR UDC 669.715'5'721'3:620.193:620.192.46

VAL'KOV, V. D., SINYAVSKIY, V. S., YELAGIN, V. I., ALESHKINA, Ye. V., DZYUBENKO, M. I., and ROZENFEL'D, I. L.

"Study of the Corrosion Cracking of Al-Zn-Mg-Cu Alloys"

V sb. Korroziya i zashchita met. (Metal Corrosion and Protection -- Collection of Works), Moscow, "Nauka," 1970, pp 75-83 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 1796 by authors)

Translation: A study was made of the resistance to corrosion cracking of Al-Zn-Mg-Cu alloy sheet as a function of chemical composition, heat-treatment procedures, and production process. Under low-temperature aging procedures (140°, 16 hr; 100°, 4 Hr + 160°, 8 hr) the addition of Cr to a greater extent than Zr increases resistance to corrosion cracking. The employment of a two-stage aging procedure with high temperature in the second stage (100°, 4 hr + 180°, 4-6 hr) makes it possible to obtain high resistance to corrosion cracking for alloys doped with Zr. Additions of Ti and Mn have no favorable effect on resistance to corrosion cracking. It rises with a decline in the degree of recrystallization of sheet. The production of a fibrous recrystallized structure is promoted by additions of Cr and, to a greater degree, Zr,

1/2

USSR UDC 536.63

ALESHKEVICH, Yu. V., GOL'DBERG, G. R., BURAVOY, S. Ye., PLATUNOV, Ye. S.

"Installation for Studying Heat Physical Properties of Materials in 50-900°C Temperature Interval"

Priborostroyeniye, No 12, 1971, pp 103-107.

ABSTRACT: An installation is described for studying the heat capacity and temperature conductivity of solids with a heat conductivity λ of 2 to 50 w/m·degree. Measurements are performed with smooth heating of a cylindrical specimen. The total measurement error is not over 5-10%. A photograph and schematic diagram of the device are presented. Errors in the measurement of temperature conductivity generally did not exceed 7%. The basic error components are: errors in determination of spacing R (2%), asymmetrical temperature field of the specimen, errors in graphic differentiation (up to 3%), errors in recording by the electronic potentiometer (1-2%) and others. The author's particularly note the errors developing in the measurement of ϑ resulting from the inertia of the R and 0 thermocouples. These errors can be reduced by placing the specimen over the thermocouples rather tightly, with a clearance not exceeding 0.03 mm.

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USSR

ALEKSEYEV [illegible], et al., [illegible]

If the energy [illegible] tation of the [illegible] prevented. The results of the experiments [illegible] ical evaluation of the [illegible] useful [illegible] 3 fig. [illegible] Received by [illegible] Evolutsiya [illegible]

2/2

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R002065900015-6

USSR [illegible]

ALE[illegible]VICH, V.A., [illegible], [illegible], [illegible]

"Limitation Of [illegible]ity and 'Spreading' Of The [illegible] stationary Thermal Defocusing"

Kvantovaya elektronika (Quantum Electronics), [illegible]

Abstract: [illegible] time distort[illegible] a cell with [illegible] (alcohol). [illegible] stationary [illegible] for the [illegible] the energy [illegible] energy [illegible] An [illegible] pattern of [illegible] leader — [illegible] form [illegible] diameter; [illegible] grows to the [illegible] as a [illegible] of of the pulse [illegible] were observed. [illegible] started after [illegible] linear leader [illegible].
1/2

USSR UDC 669.71.472(088.8)

ALESHINTSEV, V. I., BELOV, Yu. I., and SOBL', I. I.

"Electrolyzer for the Production of Aluminum"

USSR Author's Certificate No 271026, Filed 27/02/67, Published 27/08/70 (Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract No 2 G147 P)

Translation: In order to increase the service life of the electrolyzer and increase the yield of Al per current, carbon-graphite blocks are located in steps, electrically insulated from each other, from the side lining and bottom blocks.

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USSR

LUK'YANOV, A. V., et al., Khimiko-Farmatsevticheskiy Zhurnal, Vol 4, No 7, 1970, pp 16-20

It was established that all compounds tested are inactive toward tuberculosis bacillus, gram-negative bacteria, and fungi. Of correlations existing between structure and action, the following were noteworthy: 1) all tested 5-oxyderivatives of 2-methyl(or phenyl)-3-carboethoxyindole (Ia-I) do not suppress bacterial growth. 2) Antibacterial activity toward gram-positive microorganisms is exhibited by 2-methyl-3-carboethoxy-7-piperidinoindolequinones-4,5 containing an aryl substituent at N_1 (IIb-IIf). 3) Phenazine derivatives (IIIa-IIIf) of o-quinones (IIa-IIf) do not exhibit antibacterial action. Results of this study show the value of searching for new antibacterial preparations among the new series of o-quinones of 2-methyl-3-carboethoxy-7-piperidinoindole.

2/2

Nitrogen Compounds

USSR UDC 615.28:547.567'7.012

LUK'YANOV, A. V., RUDZIT, E. A., ALESHINA, V. A., VORONIN, V. G., RADKEVICH, T. P., KULIKOVA, D. A., LITSITSA, L. I., and TSIZIN, YU. S., All-Union Scientific Research Chemics Pharmaceutical Institute imeni Sergo Ordzhonikidze, Moscow, Ministry of Health USSR

"Study of Heterocyclic Quinones. XV. Synthesis and Antimicrobial Action of Substituted Indolequinones-4,5"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 4, No 7, 1970,

Abstract: In earlier reports the authors showed that several heterocyclic quinones can be obtained by oxidation of the corresponding phenols with oxygen in the presence of a Cu^{2+}-secondary amine complex. The present report describes the use of this method for oxidation of 5-oxyindoles (I) and the study of the structures of the resulting compoinds (II) and their antimicrobial action.

USSR

ALESHINA, T. P., et al., Moscow, Voprosy Kurortologii, Fizioterapii i Lechebnoy Fizicheskoy Kul'tury, No 1, 1970, pp 58-63

of oxygen also rose as the temperature dropped. The weight of oxygen is apparently influenced by climatic factors. For example, oxygen in the air of mountainous regions in the Caucasus was found to be 3-4 g/m^3 heavier than in the mountainous regions of Central Asia, when measured at stations situated at the same altitude.

2/2

USSR UDC 612.27(23+251)

ALESHINA, T. P., BUT'YEVA, I. V., and IL'ICHEVA, YE. M., Department for Study of Health Resort Resources, Central Institute of Health Resort Medicine and Physicial Therapy

"Dynamics of the Weight of Oxygen in the Air on the Plans and in the Mountains"

Moscow, Voprosy Kurortologii, Fizioterapii i Lechebnoy Fizicheskoy Kul'tury, No 1, 1970, pp 58-63

Abstract: Analysis of the weight of oxygen in the air over a period of 10 years (meteorological data of the Moscow University Observatory) revealed a distinct seasonal pattern. The lowest values were recorded in July, 269.9 g/m^3, and the highest in January, 301.4 g/m^3. This index remained more or less the same in the spring and fall, 278-288 g/m^3. It decreased with increasing height of the locality. The mean monthly values were highest at the plains and low-mountain stations, 30-35 g/m^3, and lowest in high-mountain regions, 16/5 g/m^3. Among other relationships noted, the weight of oxygen was somewhat higher on sunny, rainless days than on mostly sunny days, but with short periods of precipitation during the day or at night. The weight

Surgery

USSR

ALESHINA, S., and PAVLOV, Yu.

"The Heart That Was Saved"

Moscow, Trud, 10 Jul 71, p 4

Abstract: Heart surgery on a three-year-old patient performed in the pressure chamber of the Moscow Institute of Cardiovascular Surgery, Academy of Medical Sciences USSR is described. The heart defect was the so-called "blue" congenital defect, where pulmonary artery and aorta origins are reversed. Such surgery usually carries grave risks. Here, however, such risks were reduced by increasing air pressure to 2.5 atm forcing oxygen into the system. Under such conditions the organism can survive without respiratory oxygen for two minutes, during which the heart is disconnected. This particular operation was the fifth to be attempted in the pressure chamber; now eight have been performed. Plans are being made to use the chamber for postoperative care, surgery on gas gangrene, tetanus, and carbon dioxide poisoning. Further plans include its use in skin transplants for patients with burns, and storage of "spare parts" for surgical transplants. An example of pressure chamber therapy for a deep sea diver suffering paralysis from the bends is also presented.
1/1

2/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0128809

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BLACK PORTLAND CEMENT WAS PREPD. BY INTRODUCING A PIGMENT ADDITIVE, SUCH AS CARBON BLACK, INTO THE CLINKER WHICH WAS REMOVED FROM THE FURNACE AT GREATER THAN OR EQUAL TO 1200DEGREES AND WAS COOLED IN A REFRIGERATING APP. IN A NATURAL GAS MEDIUM TO 600DEGREES. FACILITY: STATE SCIENTIFIC RESEARCH INSTITUTE OF THE CEMENT INDUSTRY.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--PREPARATION OF BLACK PORTLAND CEMENT -U-

AUTHOR-(05)-KMITRIYEVA, V.A., KRAVCHENKO, I.V., ALESHINA, O.K., CHISTYAKOV, G.I., YEMELYANOVA, O.YA.

COUNTRY OF INFO--USSR

A

SOURCE--U.S.S.R. 267,431

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PATENT, CEMENT, PIGMENT, CARBON BLACK, HIGH TEMPERATURE HEAT TREATMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1410 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128809

UNCLASSIFIED

2/2 006 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0128833

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PORTLAND CEMENT CLINKER WAS WHITENED BY BEING COOLED FROM 1200 TO 450DEGREES IN A REDUCING GAS MEDIUM CONTG. 3-10 VOL. PERCENT CO PLUS H. FACILITY: STATE SCIENTIFIC RESEARCH INSTITUTE OF THE CEMENT INDUSTRY.

UNCLASSIFIED

1/2 006 UNCLASSIFIED PROCESSING DATE--29NOV70

TITLE--WHITENING OF A PORTLAND CEMENT CLINKER -U-

AUTHOR-(05)-KRAVCHENKO, I.V., CHEREPOVSKIY, S.S., ALESHINA, O.K., DMITRIYEVA, V.A., CHISTYAKOV, G.I.

COUNTRY OF INFO--USSR

SOURCE--USSR. 267,432

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CEMENT, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1434 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128833

UNCLASSIFIED

2/2 006 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0128803

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BLACK CEMENT BASED ON ORDINARY PORTLAND CEMENT WAS OBTAINED BY INTRODUCING A PIGMENT ADDITIVE INTO THE CLINKER. TO OBTAIN A DEEPER TONE, THE CLINKER WITH A MN ORE ADDITIVE WAS COOLED IN AN O ENRICHED GAS MEDIUM FROM ITS SINTERING TEMP. TO 900DEGREES. FACILITY: STATE SCIENTIFIC RESEARCH INSTITUTE OF THE CEMENT INDUSTRY.

UNCLASSIFIED

1/2 006 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PREPARATION OF BLACK CEMENT -U-

AUTHOR-(05)-KRAVCHENKO, I.V., CHEREPOVSKIY, S.S., ALESHINA, O.K., CHISTYAKOV, G.I., DMITRIYEVA, V.A.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 267,430

REFERENCE--OTKRYTIYA, IZOBRE., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CEMENT, PATENT, PIGMENT, MANGANESE COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1404 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128803

UNCLASSIFIED

USSR UDC 669.293.5.294.018.8.669.018.2

DONTSOV, S. N., MOISEYEVA, I. S., MEL'NIKOVA, L. V., GLUKHOVA, A. I., ANDREYEVA, V. V., ALESHINA, L. V., STRIZHEVSKAYA, L. G.

"Influence of Technological Factors on Corrosion Resistance and Mechanical Properties of Niobium-Tantalum Alloys"

Nauchn. Tr. N-i. i Proyektn. In-t Redkomet. Prom-sti [Scientific Works of Scientific Research and Planning Institute for the Rare Metals Industry], 1971, Vol. 32, pp. 152-160. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I736 by the authors).

Translation: Influence of technological factors on the corrosion resistance of Nb-Ta alloys is studied. 4 figs; 5 biblio refs.

1/1

Aleshina, L. A., Vrublevskaya, E. L., Mokrov, A. P., Rykova, L. L., Shivrin, O. N., Rabinovich, Ye. M., Moscow, Fizika i Khimiya Obrabotki Materialov, No 6, Nov-Dec 73, pp 111-117.

50 wt. % W. Increasing the temperature for this alloy leads to the formation of concentration heterogeneities. The kinetics of sintering in the surface layer differ from sintering in the volume of a specimen. The surface layers are richer in W.

2/2 013 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111534

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHOTOCHLORINATION OF MECHCL SUB2 (I) AT MINUS 10 TO PLUS 60DEGREES IN A FLOW REACTOR INTO WHICH CL AT A RATE OF 3 1.-1. HR WAS ADMITTED IN A RATIO TO I OF 0.18-0.6:1 YIELDED MECCL SUB3 (II) AND CL SUB2 CHCH SUB2 CL (III) IN A CONST. RATIO OF 3.3:1. WHEN THE CL-I RATIO WAS INCREASED IN THIS RANGE, THE YIELD OF II ROSE FROM 21.1 TO 43.7PERCENT AS THE YIELD OF POLYCHLORIDES ROSE FROM 1.2 TO 6.0PERCENT. WITH INCREASING TEMP. FROM 20 TO 60DEGREES, THE CHLORINATION RATE FELL BECAUSE OF REDUCED CL SOLY. AND THE POLYCHLORIDE YIELD ROSE FROM 3.3 TO 4.4PERCENT. THE MAX. PERMISSABLE VOL. OF O IN THE CL AND WT. OF FE IN I WERE 0.1 AND 0.001PERCENT, RESP., AND THE OPTIMAL CONCNS. WERE 0.02 AND 0.005PERCENT. UNDER OPTIMAL CONDITIONS (20DEGREES AND A CL-I RATIO OF 0.33:1), THE PRODUCT CONTAINED 55.6PERCENT I, 32.0PERCENT II, 9.7PERCENT III, AND 2.7PERCENT POLYCHLORIDES. PYREX, MO, AND TRANSPARENT QUARTZ GLASS WERE EQUIV. FOR USE IN THE REACTOR AND IN THE QUARTZ HG LAMP FILTER.

UNCLASSIFIED

USSR

1/2 013 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--PHOTOCHEMICAL CHLORINATION OF 1,1,DICHLOROETHANE -U-

AUTHOR-(02)-BRATULYUBOV, A.S., ALESHINA, G.F.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3) 651-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHLORINATION, CHLORDETHANE, CHEMICAL REACTOR, PHOTOCHEMISTRY, CHLORINATED ALIPHATIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0340 STEP NO--UR/0080/70/043/003/0651/0656

CIRC ACCESSION NO--AP0111534

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136279

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. METHYLCHLOROFORM IS STABILIZED BY ADDING GUAIACOL, NITROANISOLE, OR THEIR MIXT. (30-50PERCENT NITROANISOLE) IN A QUANTITY OF 3-5PERCENT.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--STABILIZATION OF 1,1,1,TRICHLOROETHANE -U-

AUTHOR-(03)-BRATOLYUBOV, A.S., ALESHINA, G.F., TSIBULSKAYA, G.S.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,381

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI, 1970

DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL STABILITY, CHLOROETHANE, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0845 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136279

UNCLASSIFIED

Powder Metallurgy

USSR

UDC 621.762.5.001

KATRUS, O. A., and ALESHINA, A. V., Institute of Problems of Material Science, Academy of Sciences Ukr SSR

"Investigation of the Process of Short-Period Sintering of Porous Rolled Sheet From Stainless Steel Powder"

Kiev, Poroshkovaya metallurgiya, No 5, May 71, pp 40-42

Abstract: The theoretical possibility of short-period sintering of porous rolled steel from Kh18N9 and Kh18N15 stainless steel powders under a hydrogen atmosphere at 1350-1400° C is demonstrated. The results, presented in graphs in the form of the relative electric conductivity, tensile strength, and porosity dependence on sintering holding time at 1400°C, as well as the dependence of the relative electric conductivity and tensile strength on porosity at 1400°C, show that sintering of relatively high-initial-density samples is accompanied by a substantial shrinkage. They also show that short-time sintering at 1400°C of the aforementioned steels ensures mechanical properties sufficient for filter materials. The perfection of interparticle contacts at short-time sintering evaluated by the value of electric conductivity at 1350-1400°C is somewhat lower than that observed with longer time sintering.

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USSR

KATRUS, O. A., et al, Poroshkovaya metallurgiya, No 12, Dec 71, pp 32-34

dislocation slip within the first 15 sec of sintering. The change in the porosity of calcium hydride titanium within the first minute amounts to 12% while further changes (by 8%) occur during the next 5 mins. The changes in resistivity and hardness versus preliminary sintering time and the changes in resistivity, relative conductivity, shear strength, and porosity versus sintering time are reflected in curves. The cited changes in the physicomechanical properties of porous rolled metal from reduced and electrolytic titanium powders indicate optimal hold times of 30-40 sec and 60-120 sec, respectively. (2 illustrations, 8 bibliographic references).

2/2

USSR

UDC: 621.762.5.001

KATROS, O. A. and [redacted], A. V., Institute of Problems of Materials Science, Academy of Sciences, Ukrainian SSR

"Study of the Sintering of Rolled Stock From Titanium Powders"

Kiev, Poroshkovaya metallurgiya, No 12, Dec 71, pp 32-34

Abstract: The objective of the study was the sintering of rolled stock from titanium powders as applied to continuous technological cycles of sintering in argon current with hold times not exceeding several minutes. Involved were reduced and electrolytic titanium powders with average particle sizes of 20-30 μ and 150-200 μ, respectively. The measurements included porosity, HV hardness, conductivity, and resistivity. The higher shear strength, lower resistivity (converting to zero porosity), and higher relative conductivity in the reduced titanium specimens is attributed to the greater activity in sintering the finer calcium hydride titanium. The inferred activation mechanism is due to thermally activated

1/2

2/2 033 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135868

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO HUNDRED AND TWENTY PATINETS WITH DISCOGENIC LUMBOSACRAL RADICULITIS WERE EXAMINED BY MEANS OF PNEUMOMYELOGRAPHY. SIDE BY SIDE WITH HIGH DIAGNOSTIC VALUE OF THAT METHOD IN A NUMBER OF CASES A DISTINCT THERAPEUTIC EFFECT WAS NOTED, CAUSED BY SUBARACHNOID ADMINISTRATION OF OXYGEN IN THE CISTERNA TERMINALIS. DECREASE OR DISAPPEARANCE OF THE PAIN SYNDROME WAS OBSERVED IN 15.1PERCENT OF THE PATIENTS, COMPLETE DISAPPEARANCE OF CLINICAL MANIFESTATIONS OF THE DISEASE IN 2.7PERCENT, CESSATION OF SPASMS IN MUSCULUS GASTROCNEMIUS IN 3.3PERCENT, AND RESTORATION OF SENSITIVITY IN 7.5PERCENT. ENDOLUMBAR INSUFFLATION OF OXYGEN WAS TESTED ALSO IN CERTAIN OTHER SPINAL PROCESSES CHARACTERIZED BY THE FORMATION OF MENINGIAL ACCRETIONS. A NOTICEABLE THERAPEUTIC EFFECT WAS OBTAINED IN INDIVIDUAL CASES. IN THE OPINION OF THE AUTHOR THE MECHANISM OF THE THERAPEUTIC EFFECT OF OXYGEN ADMINISTRED INTO THE SUBARACHNOIDAL SPACE CONSISTS IN STRATIFICATION OF THE SOFT COMMISSURES IN THE ARACHNOIDAL SPACE AND RADICULAR VAGINA, THE LIQUIDATION OF CYSTS AND THE OXYGENATION OF THE SURROUNDING TISSUES.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE -27NOV70

TITLE--SUBARACHNOID ADMINISTRATION OF OXYGEN IN LUMBOSACRAL RADICULITIES -U-

AUTHOR--ALESHIN, YE.V.

COUNTRY OF INFO--USSR

SOURCE--VOYENNO-MEDITSINSKIY ZHURNAL, 1970, NR 3, PP 121

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MUSCULOSKELETAL DISEASE, DIAGNOSTIC METHODS, OXYGEN, PROPHYLAXIS, PAIN, CYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0383 STEP NO--UR/0177/70/000/003/0121/0121

CIRC ACCESSION NO--AP0135868

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0143384

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROTEIN METABOLISM IN LEAVES AND TILLERING NODES OF HEALTHY WINTER WHEAT, VARIETY BEZOSTAYA 1, AND WHEAT INFECTED WITH WHEAT STREAK MOSAIC, WAS STUDIED. TESTS SHOWED THAT INFECTION CONSIDERABLY DISRUPTS NITROGEN METABOLISM IN PLANTS; THE AMOUNT OF PROTEIN NITROGEN DECREASED AND THE AMOUNT OF NONPROTEIN INCREASED, INDICATING INHIBITION OF PROTEIN SYNTHESIS BY THE VIRUS. FRACTIONATION OF PROTEINS ON AE CELLULOSE SHOWED THAT THE VIRUS CAUSES IMPORTANT CHANGES IN PROTEIN METABOLISM: THE NUMBER OF PROTEIN FRACTIONS IN INFECTED PLANTS DROPPED FROM EIGHT TO SIX, AND TWO NEW FRACTIONS NOT FOUND IN HEALTHY PLANTS APPEARED. APPARENTLY THE VIRUS PREVENTS SYNTHESIS OF PLANT PROTEINS IN FAVOR OF ITS OWN.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--WHEAT STREAK MOSAIC VIRUS AND PROTEIN METABOLISM IN PLANTS -U-

AUTHOR-(04)-KANEVCHEVA, I.S., ALESHIN, YE.P., ZEMLINA, A.G., CHAPLENKO, M.M.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI, 1970, NR 3, PP 27-29

DATE PUBLISHED-------70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--WHEAT, PLANT DISEASE, PROTEIN METABOLISM, PLANT VIRUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/005049/E02 STEP NO--UR/9091/70/000/003/0027/0029

CIRC ACCESSION NO--AP0143384

UNCLASSIFIED

USSR

UDC 633.11'412.9

KANEVCHEVA, I. S., ALESHIN, Ye. P., ZEMLINA, A. G., and SAKS[illegible], P. S.

"Wheat Streak Mosaic Virus and Protein Metabolism in Winter Wheat"

Moscow, Vestnik Sel'skokhozyaystvennoy Nauki, No 3, 1970, pp [illegible]

Abstract: Wheat streak mosaic virus causes massive destruction of winter wheat in the epiphytotic period in the Krasnodarsk area. In an attempt to elucidate the mechanism of this infection, the authors studied the effect of the virus on protein content in the leaves of Bezostaya 1 wheat. They found that virus infection affects plant nitrogen metabolism: infected plants show lower levels of protein nitrogen and increased values of nonprotein nitrogen, indicating depressed protein synthesis. Chromatography of albumin on AE-cellulose A-50 showed that the virus causes extensive changes in protein metabolism. Many fractions disappear, while new ones show up which were absent in healthy plants.

1/1

USSR

CHIGRIN, V. V., et al, Sel'skokhozyaystvennaya Biologiya, Vol 5, No 4, 1970, pp 591-594

during germination. The ability of the spores to oxidize caffeic and protocatechuic acids and the large quantity of these acids in the spores suggest that there is an alternative mode of terminal oxidation through the polyphenol-polyphenoloxidase system.

2/2

USSR

UDC 632.4.42/.49A/z

CHIGRIN, V. V., BESSMEL'TSEVA, L. M., POLYAKOVA, G. D., and ALESHIN, Ye. P.,
North Caucasus Scientific Research Institute of Phytopathology, Krasnodar

"Enzymatic Activity in Dormant and Germinating Uredospores of Puccinia graminis f. tritici"

Moscow, Sel'skokhozyaystvennaya Biologiya, Vol 5, No 4, 1970, pp 591-594

Abstract: Respiratory activity and respiratory rate were determined in moist uredospores of the agent of wheat stem rust after germination for 18 hours. The intensity of oxygen uptake by homogenates and intact spores in the presence of sodium linolate, sodium ascorbate, cytochrome C, phloroglucinol, and gallic, caffeic, and protocatechuic acids, as well as in the presence of sidium azide and sodium diethyldithio-carbamate was measured in dormant uredospores before and 18 hours after the start of germination. Respiration of uredospores sharply increased when they were moistened but decreased after 18 hours' germination to the rate of dormant spores. These changes in respiratory rate indicate that in the course of germination fats are utilized first and then carbohydrates. Copper-containing terminal oxidases play an important part in oxygen uptake by the uredospores, and the activity of these enzymes increases appreciably

1/2

Instrumentation and Equipment

USSR

UDC 620.171.251.1

NOVIKOV, N. V., ALEKSYUK, M. M., VOYNITSKIY, A. G., KOVAL'CHUK, B. I., MITLIKIN, M. D., and ZARUBIN, L. I., Kiev

"Specifics of Mechanical Tests of Structural Materials Over a Broad Range of Low Temperatures"

Kiev, Problemy Prochnosti, No 4, Apr 71, pp 20-26

Abstract: Methods and equipment for mechanical testing at low temperatures used at the Institute of Problems of Strength of the Academy of Sciences Ukrainian SSR are described. The equipment is used to study the temperature dependence of the mechanical properties of steels, aluminum, and titanium alloys. Equipment illustrated includes a device for maintenance of temperatures from 0 to -196°C, multiposition clamps for circular and flat specimens, the UN-30 tensile testing device, allowing loads of up to 30 tons to be applied at temperatures down to -269°K, a miniature semiconductor thermometer, the SZF-1 tensile testing machine, equipped with a chamber for testing at down to -269°C, and an electromechanical tensometer for measurement of linear and angular displacements.

1/1

2/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0125372

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE THERMAL CONDITIONS IN THE MARTIAN SOIL AT THE SOUTH POLE OF THE PLANET AND OF THE ANNUAL VARIATIONS IN THE THICKNESS OF THE SOUTHERN POLAR CAP AS A FUNCTION OF THE CHARACTERISTICS OF THE BASE AND THE CARBON DIOXIDE CONDENSATION AND SUBLIMATION PROCESSES. IT IS SHOWN THAT FOR A GIVEN PARTIAL CARBON DIOXIDE PRESSURE IN THE MARTIAN ATMOSPHERE, THE DURATION OF THE POLAR CAP INCREASES WITH INCREASING THERMAL INERTIA OF THE SOIL.

FACILITY: GOR'KOVSKII GOSUDARSTVENNYI UNIVERSITET, GORKI, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--THERMAL CONDITIONS IN THE SOUTH POLE REGION OF MARS -U-

AUTHOR-(02)-ALESHIN, V.I., SHCHUKO, O.B.

COUNTRY OF INFO--USSR

SOURCE--ASTRONOMICHESKII ZHURNAL, VOL. 47, NO. 2, 1970, P. 392-396

DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS

TOPIC TAGS--POLAR AREA, MARS PLANET, SOIL, CARBON DIOXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1756 STEP NO--UR/0033/70/047/002/0392/0396

CIRC ACCESSION NO--AP0125372
UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0117779

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE D. OF STATES IN VALENCE ZONE OF CUBIC BN AS WELL AS THE INTENSITIES OF X RAY EMISSION SPECTRA OF B AND N ARE CALCD. AND COMPARED WITH EXPTL. DATA. THE SPECTRA IN THE ULTRASOFT REGION CAN BE USED FOR OBTAINING VALUABLE INFORMATION ABOUT BOTH ZONE STRUCTURE AND POSITIONS OF SINGULARITIES.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--INTERPRETATION OF X RAY EMISSION SPECTRA OF CRYSTALS IN THE ULTRASOFT REGION -U-

AUTHOR-(02)-SMIRNOV, V.P., ALESHIN, V.G.

A

COUNTRY OF INFO--USSR

SOURCE--VESTN. LENINGRAD. UNIV., FIZ., KHIM. 1970, (1), 47-9

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--X RAY SPECTRUM, EMISSION SPECTRUM, CONDUCTION ELECTRON, ELECTRON ENERGY LEVEL, BORON NITRIDE, CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0549 STEP NO--UR/0054/70/000/001/0047/0049

CIRC ACCESSION NO--AP0117779

UNCLASSIFIED

USSR UDC: 537.226+537.311.33].01

ALESHIN, V. D., NEMOSHKALENKO, V. V.

"Band Structure and X-Ray Emission Spectra of Crystals"

Zonnaya struktura i rentgenovskiye emissionnyye spektra kristallov. In-t metallofiz. AN USSR. Preprint. No 2 (cf. English above. Institute of Physics of Metals, Academy of Sciences of the UkrSSR. Preprint. No 2), Kiev, 1970, 65 pp, ill. 25 k. (from RZh-Fizika, No 9, Sep 70, Abstract No 9Feb75)

Translation: The authors examine the energy spectra of cubic crystals of BN, SiC, and BP. The orthogonalized-plane-wave method is used for finding the band energies and wave functions and for determining the density of states in the valence band of BN and SiC and the emission x-ray spectra of BN.

1/1

USSR

AKHIYEZER, A. I., et al, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 13, No 3, 5 Feb 71, pp 164-166

the plasmons is sufficiently great, one can increase the energy of the plasmons by a simple method, modulating the external parameters on which their frequencies depend. In the case of a collisionless magnetoactive plasma with hot electrons and cold ions, it is possible for three types of low-frequency, weakly damping collective oscillations to exist: Alfven, fast, and slow magnetosonic waves. The frequencies of these waves depend on the external magnetic field, and by modulating this field one can heat the gas of Alfven and magnetosonic waves. The energy transmitted to the plasmons in this method of heating, which can be called the magnetic pumping method, can considerably exceed the Joule heat directly obtained by the particles in magnetic pumping Gradually the energy lost by the plasmons will transfer to the particles, and in the plasmon subsystem itself there will be established a certain stationary energy level (the level of turbulent noises). Plasma electrons will then basically be heated in a nonisothermal plasma due to the effect of Landau damping. Conditions are derived under which the proposed method of magnetic pumping can be achieved.

2/2

USSR

AKHIYEZER, A. I., ALEKSIN, V. F., and KHODUSOV, V. D., Khar'kov State University

"Concerning a New Method for the Magnetic Pumping of Energy into a Turbulent Plasma"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 13, No 3, 5 Feb 71, pp 164-166

Abstract: The new method of heating a plasma by magnetic pumping is introduced as follows: if the intensity of plasma waves ("plasmons") is sufficiently great, the interaction of the plasmons with one another may become more probable than interaction of plasmons with particles of the plasma. Under these conditions, the plasma may be considered as consisting of two weakly interacting subsystems, particles and plasmons, between which there occurs a slow exchange of energy. Relaxation in the plasma will have a two-stage character: there will first be set up quasistatic equilibria in the subsystems of particles and plasmons with different temperatures and there then will occur a slower process of temperature equalization. Particular attention is drawn here to the situation in which, if the initial energy of

USSR

ALEKSIN, V. F., et al., Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 8, Aug 71, pp 1288-1292

by first examining the relaxation of the Alfven spectrum. Finally, the authors study the relaxation of the spectrum of fast magnetosonic waves wherein under certain conditions an equilibrium state is established due to the simultaneous excitation of the Alfven and the fast magnetosonic waves. Throughout the article the authors use equations to illustrate their findings. The article contains 14 bibliographic entries.

USSR UDC 533.916

ALEKSIN, V. F., PAVLENKO, V. P., and KHODUSOV, V. D., Institute of Physcis, Academy of Sciences Ukrainian SSR, Kiev

"Relacation of the Spectrum of Magnetohydrodynamic Waves in a Weakly Turbulent Plasma"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 8, Aug 71, pp 1288-1292

Abstract: The authors are concerned in this article with a study of the nonlinear interaction of magnetohydrodynamic waves under conditions of weak magnetohydrodynamic turbulence. They study the processes of relaxation of magnetohydrodynamic waves wherein the basic interaction is that of bound three-plasmon processes. They further study the nonlinear interaction of waves in an unbounded plasma which is described by the equations of ideal magnetic hydrodynamics. When the relationship between the waves is weakly nonlinear, and assuming the phase oscillations to be chaotic, the authors describe the interaction of the waves in a weakly turbulent plasma by kinetic equations similar to that used for the distribution function of elementary excitations in a solid.

Employing the equations found in the first two sections, the authors apply them to studying the relaxation processes of magnetohydrodynamic waves

1/2

USSR UDC 536.46

ALESHIN, V. D., SVETLOV, B. S., FOGEL'ZANG, A. Ye., Moscow

"The Specifics of Combustion of Mixtures Consisting of Rapidly Burning Explosives"

Novosibirsk, Fizika Goreniya i Vzryva, No. 4, Dec. 70, p. 432-438.

Abstract: Combustion studies were performed using lead dinitrophenolate, with an oxygen balance of -47 and potassium perchlorate as an oxidizer. Mixed charges of fine powders were pressed at 4,000-6,000 kg/cm^2, then burned in a constant pressure bomb, with the nature and rate of combustion recorded by drum photography. It is found that the addition of the $KClO_4$ has little influence on the burning rate. The influence which it does have can be explained by assuming that the burning occurs only in the rapid-burning component, and that the $KClO_4$ acts solely to divide the explosive into small channels, thus decreasing the burning rate when additive particle size and concentration become sufficient to reduce the channel diameter to below the critical size.

1/1

USSR UDC: 539.172.3:539.2

ARTEM'YEV, A. N., ALESHIN, K. P., MIRZABABAYEV, R. M., SKLYAREVSKIY, V. V., SMIRNOV, G. V., and STEPANOV, Yu. P.

"Mössbauer High Angular Resolution Diffractometer"

Moscow, Pribory i Tekhnika Eksperimenta, No 6, 1971, pp 64-66

Abstract: A Mössbauer diffractometer, designed for a broad variety of measurements with x-rays and gamma radiation, is described. The essential characteristic of this instrument is the low count rate of gamma quanta even with strong gamma ray sources, thus resulting in the repeated and prolonged measurement of a single peak. The instrument contains an x-ray tube in addition to the Mössbauer source, thus permitting the correction and investigation of a crystal structure preparatory to operation with gamma radiation. The basic structure of the instrument is that of the URS-50IM x-ray equipment. A description of it is given together with an external-view photograph and a sample of the spectrum for a quartz crystal and an α-Fe_2O_3 monocrystal. The authors thank I. B. Filippov and M. A. Volkov for their assistance in preparing and setting up the instrument. They are associated with the Institute of Atomic Energy at Moscow.
1/1

USSR UDC 539.3:534.1

KOCHERGIN, Yu. G., FAKEYEV, N. P., ALESHIN, N. N.

"Experimental Study of Vibrations of Foundations Joined by a Reinforced Concrete Plate"

V sb. Issled. po stroit. konstruktsiyam (Studies in Structural Designs -- Collection of Works), Tomsk, Tomsk University, 1972, pp 66-77 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V238)

Translation: The results of experimental studies on vibrations of foundations of pillars after their ends are joined by reinforced concrete plates are discussed. The reason for initiating the study was to determine the extreme vibrations of foundations of pillars and building structures. The reason for these vibrations was irrigation of the area which brought on a drop in the rigidity of the foundation. It is noted that the joining of the pillar foundations by reinforced concrete plates did not give the expected results. The experimental data obtained require careful processing. O. V. Luzhin.

1/1

2/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137539

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS ARTICLE EXTENDS A PREVIOUS REVIEW BY THE SAME AUTHOR (1969). RECENT FINDINGS INDICATE THAT THYROCALCITONIN (I) IS PRODUCED IN CELLS DERIVED FROM THE ULTIMOBRANCHIAL BODIES. THE LATTER BECOME INCORPORATED INTO THE INTERFOLLICULAR TISSUE OF THE THYROID GLAND DURING EMBRYOGENESIS IN MAMMALS. IT IS LIKELY THAT ONLY SOME OF THE INTERFOLLICULAR EPITHELIAL CELLS ORIGINATE FROM THE ULTIMOBRANCHIAL BODIES AND ARE ENGAGED IN THE PRODUCTION OF I. ON THE OTHER HAND, MORPHOL. FINDINGS INDICATE THAT THE INTERFOLLICULAR CELLS OF CLEARLY THYROID ORIGIN ARE ALSO IN SOME WAY INVOLVED IN THE THYROID REACTION TO HYPERCALCEMIA. FACILITY: KHAR'KOV. MED. INST., KHARKOV, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--THYROCALCITONIN -U-

AUTHOR--ALESHIN, B.V.

COUNTRY OF INFO--USSR

SOURCE--USP. SOUREM. BIOL. 1970, 69(1), 158-64

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--THYROID GLAND, EMBRYOLOGY, MAMMAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0448 STEP NO--UR/0221/70/069/001/0158/0164

CIRC ACCESSION NO--AP0137539

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102473

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INCREASED ACTIVITY OF THE SUPRAOPTIC NUCLEUS IN RATS DURING THE INITIAL PERIOD OF RESTITUTION (AFTER WITHDRAWAL OF 6, METHYLTHIOURACIL AT 10 MG-100 G WITH THE I DAILY FOR 20 DAYS) FACILITATED THE ONSET OF REBOUND PHENOMENON IN THE THYROID GLAND AND INCREASED THE I CONCN. IN THE DESTROYED THYROID PARENCHYMA. THE EFFECT OF THYROTROPIC HORMONE (TTH), WHOSE RELEASE INCREASED UNTIL THE 8TH DAY OF RESTITUTION, EVIDENTLY PROVIDED MAXIMAL REBOUND INCREASE IN THYROTROPIC FUNCTION AND FORMATION OF IODINATED THYROID HORMONES. THE INCREASED SECRETORY ACTIVITY OF THE SUPRAOPTIC CELLS COINCIDED WITH THE GREATEST INCREASE IN 2 HR I UPTAKE BY THE PARENCHYMA, SUGGESTING THAT VASOPRESSIN CAN STIMULATE THE I CONCG. THYROID MECHANISM AND PROMOTE THE ONSET OF REBOUND AND THAT THE FURTHER INCREASE IN THIS CHANGE, WHICH IS AT A PEAK ON THE 8TH DAY OF RESTITUTION, IS DETD. BY THYROTROPIC HORMONE.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--REBOUND PHENOMENON IN THE ANTERIOR HYPOTHALAMIC NEUROSECRETORY NUCLEI DURING THYROID RESTITUTION AFTER WITHDRAWAL OF 6 METHYLTHIOURACIL

AUTHOR--ALESHIN, B.V., MAMINA, V.V.

COUNTRY OF INFO--USSR

SOURCE--PROBL. ENDOKRINOL. 1970, 16(1), 47-56

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--URACIL, THYROID GLAND, THYROID HORMONE, BRAIN, MEDICAL EXPERIMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/1707 STEP NO--UR/0502/70/016/001/0047/0056

CIRC ACCESSION NO--AP0102473

UNCLASSIFIED

USSR

UDC 519.21

ALESHIN, B. V.

"The Behavior of Integrals in a Near Hamiltonian System of Stochastic Differential Equations"

Vestn. Mosk. Un-ta. Mat., Mekh [Herald of Moscow University, Mathematics, Mechanics] No 5, 1970, pp 3-6 (Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V69 by the author).

Translation: A Hamiltonian system of differential equations of nonlinear oscillations, perturbed by small forces and dependent on slowly changing parameters which may be random, is studied. Based on the averaging principle for diffusion processes, the author establishes conditions of adiabatic invariance for the action integral.

1/1

USSR UDC 621.771.019.53.072

POLUKHIN, V. P., LUR'YEV, V. V., and ALESHIN, A. P.

"Modelling Uninstalled Rolling Processes on an Analog Computer"

Moscow, Plasticheskaya Deformatisya Metallov i Splavov, "Metallurgiya" Publishing House, No 64, 1970, pp 19-23

Translation: An electronic model designed to investigate the dynamics of the rolling process is described.

The modelling was done on an EMU-10 analog computer.

The equations of the "i" stand are given in increments. A block diagram of the model is given, and a model oscillogram is shown. Two illustrations, one table, and five bibliographic entries.

1/1

USSR

UDC 621.771.063

POLUKHIN, V. P., LUR'YEV, V. V. and ALESHIN, A. P.

"An Electronic Model for Investigating Installed Continuous Rolling Processes"

Moscow, Plasticheskaya Deformatsiya Metallov i Splavov, "Metallurgiya" Publishing House, No 64, 1970, pp 15-19

Translation: An electronic model of a four-stand continuous cold rolling mill is created on the basis of the method of joining individual stands by tension.

MN-7 analog computers were used during the modelling. A schematic diagram of the model is given, and a sample calculation is made. Three illustrations and five bibliographic entries.

1/1

USSR

UDC 518.512.85

ALESHIN, A. G., and MITICHENKO, G. A.

"Problem of Solving Algebraic Equations"

Tr. Poltav. s.-kh. in-t (Transactions of the Poltava Agricultural Institute), No 15, 1971, pp 127-130 (from Referativnyy Zhurnal -- Matematika, No 7, July 71, Abstract No 7b902)

Translation: The problem of applying the theory of graphs to solving certain algebraic equations is examined. An example of the solution of a determinant is given.

Authors' Abstract

1/1

USSR

ALESHCHENKOV, V. B., et al, Pribory i tekhnika eksperimenta, No 1, Jan-Feb 71, pp 89-93

These blocks are also physically separate and are housed in two sections, one of which is equipped with a perforator and a digital printer. The system's technical specifications are listed in a short paragraph.

2/2

Information Theory

USSR UDC: 681.322

ALESHCHENKOV, V. B., GRIGORENKO, N. P., GULYAYEV, V. A., MATALIN, L. A., TISHECHKIN, A. S.

"Data Gathering System"

Moscow, Pribory i tekhnika eksperimenta, No 1, Jan-Feb 71, pp 89-93

Abstract: The data gathering system is defined as the control of the parameters of a system under test through the accumulation of data with a minimal expenditure of human labor and in a form convenient for input to an electronic computer. The system considered in this paper is based on a switching analog-digital converter. Signals from various sensors feed into the switching device, which is directed by a control apparatus to select a single signal for input to the converter, and thence to a linearizer, a frequency meter, and a readout device in succession. The exchange of signal information among these blocks is indicated in an accompanying block diagram and is explained in the text together with an account of what happens inside each of the blocks.

1/2

2/2 033 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0100963

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DATA ON THE THERMODYNAMIC PROPERTIES OF AIR IN THE 20-24000EGREESK TEMPERATURE RANGE AND 10 PRIME NEGATIVE8-40 ATM PRESSURE RANGE ARE SYSTEMATIZED AND PRESENTED IN THREE CHARTS. THE AUTHORS 1-AN RATHER HEAVILY ON PREVIOUS WORK BY OTHERS (FOR SPECIFIC RANGES) AND THEY NOTE THAT AVAILABLE EXPERIMENTAL DATA FOR AIR SHOW A GREAT DEAL OF DISPERSION WHEN COMPARED WITH DATA FOR PURE COMPONENTS. FOUR POSTULATES GOVERNING THE DERIVATION OF THE VALUES FOR THOSE RANGES DEALT WITH BY THE AUTHORS ARE GIVEN AND DISCUSSED BRIEFLY. THE AUTHORS CONCLUDE THAT THE TS DIAGRAMS PRESENTED CAN BE USED FOR ENGINEERING COMPUTATIONS. THEY NOTE, HOWEVER, THAT THE LIMITED SCOPE OF THE INITIAL DATA CAN LEAD TO ERRORS WHEN WORKING BEYOND AREAS OF TEMPERATURE AND PRESSURE COVERED BY EXPERIMENTALLY VERIFIED DATA.
FACILITY: MOSCOW HIGHER TECHNICAL SCHOOL.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--TS DIAGRAM FOR AIR IN A RANGE OF TEMPERATURES FROM 20 TO 24000EGREESK AND PRESSURES FROM 10 PRIME NEGATIVE8 ATM TO 40 ATM

AUTHOR-(04)-VORONIN, G.I., ARKHAROV, A.M., ALENTYEBA, O.A., KURAPOVA, L.A.

A

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVENDENIY, MASHINOSTROYENIYE, NO. 1, 1970, PP 86-91

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--THERMODYNAMIC PROPERTY, AIR, GRAPHIC TECHNIQUE, TEMPERATURE DEPENDENCE, ENTROPY, PRESSURE GRADIENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/0487 STEP NO--UR/0145/70/000/001/0086/0091

CIRC ACCESSION NO--AT0100963

UNCLASSIFIED

USSR

UDC 546.161

ALENCHIKOVA, I. F., NEPOREZOV, V. S., and SUKHOVERKHOV, V. F., Academy of Sciences USSR, Institute of General and Inorganic Chemistry imeni N. S. Kurnakov

"Kinetics of the Interaction of Fluorine with Iron-Nickel Alloys"

Moscow, Zashchita Metallov, Vol 9, No 2, Mar-Apr 73, pp 190-191

Abstract: The kinetics of the interaction of fluorine with 50N iron-nickel alloy (in %: 50 Fe, 0.3 Si, 0.5 Mn, 0.05 Mo, 49 Ni, 0.15 Al) and 79NM iron-nickel alloy (in %: 80 Ni, 0.5 Si, 0.6 Mn, 3.9 Mo, 15 Fe) were investigated. The interaction of F with 50N alloy at 350-500°, described by a linear dependence in time, results in development of loose fluorine films easily separating into layers. The interaction of F with 79NM alloy proceeds linearly at 700-850°, with development of porous films separating into layers, it proceeds parabolically at 500-650°. The apparent activation energy of the interaction processes is 4580 cal/mol for 550-650° (fluorine diffusion through the fluoride layer) and 16,660 cal/mol for 700-850° (chemical interaction of reagents). Two figures, two tables, twelve bibliographic references.

1/1

USSR

ALENICHEV, V.S., etal, Elektronnaya Obrabotka Materialov, No 1 (37), 1971, pp 32-35

The agreement between calculations and tests was satisfactory.

It was also discovered that the wire material having the lowest resistivity produces the highest shock wave pressure.

2/2

USSR

ALENICHEV, V. S., MEL'NIKOV, M. A., BARCHENKO, T. N.,
Tomsk

"Explosive Wires as a Source of Shock Waves in Water"

Moscow, Electronnaya Obrabotka Materialov,
No. 1 (37), 1971, pp 32-35

Abstract: The electrical explosion of wires is widely used in technological processes such as stamping, expansion of pipes and so forth.

An experimental investigation was made in order to verify the validity of formulae giving the optimum length and cross section of wire as a function of voltage, capacity of the circuit, and natural frequency of the circuit. The test wire was placed in a tank filled with water. The shock wave pressure was measured by an impact pressure transducer located 150-200 millimeters from the wire axis.

USSR

UDC: 629.7.036.54:532.5

ALEMASOV, V. Ye., DREGALIN, A. F., TRUNOS, V. N.

"Thermodynamics of the Flow of a Reacting Gas Through a Nozzle With Distributed Heat Exchange and Friction"

Tr. Vses. nauchno-tekhn. konferentsii po termodinamike. Leningr. tekhnol. in-t kholodil'n. prom-sti (Transactions of the All-Union Scientific and Technical Conference on Thermodynamics. Leningrad Technological Institute of the Refrigeration Industry), Leningrad, 1970, pp 168-177 (from RZh-Aviatsionnyye i Raketnyye Dvigateli, No 10, Oct 70, Abstract No 10.34.111)

Translation: The parameters of a nozzle flow are calculated with the following assumptions: one-dimensional steady-state flow of a continuous compressible medium is considered; the components of the combustion products and the mixture of these components are ideal; the process of expansion in the nozzle is chemically and energetically balanced; there is no condensate in the products of combustion; the Mach number at the input to the chamber is zero; cooling is independent. Flow of the products of combustion of kerosene with liquid oxygen is calculated by way of example. Three illustrations, bibliography of eleven titles.

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USSR UDC 629.7.036.54(536.246+536.9)001.2

ALEKSOV, V. YE., KLABUKOV, V. YA., SAGADEYEV, V. I., LUK'YANOV, YU. G., SHIGAPOV, A. B., and KUZ'MIN, V. A.

"Indicatrix of Oxide Particle Dissipation in Products of Corbustion"

Kazan', Tr. Kazan. Aviats. In-ta (Works of Kazan' Aviation Institute), No 133, 1971, pp 20-29 (from Referativnyy Zhurnal-Aviatsionnyye i Raketnyye Dvigateli, No 2, Feb 72, Abstract No 2.34.118)

Translation: When studying the thermal radiation energy in combustion products containing solid and liquid particles of condensed aluminum, magnesium and other oxides we must know the angular distribution of dissipation radiation (dissipation indicatrix) as well as the absorption and dissipation coefficients. Presently available data on dissipation indicatrix apply basically to atmospheric physics problems. The article presents the algorithm developed by the authors for calculating the dissipation indicatrix by means of M-20, M-220 and BESM-4 computers. Indicatrix calculations with BESM-4 computers for wide range of temperatures and particle sizes of the products of combustion are also presented. 10 illustrations, 16 references.

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USSR

UDC: 621.455

ALEMASOV, V. Ye., DREGALIN, A. F., KHAMIDULLIN, A. Z.

"Determining the Parameters of the Non-Isobaric Combustion Chamber of a Liquid Propellant Engine from the Data of Thermodynamic Calculation when Pressure is Constant"

Kazan', Izvestiya VUZov, Aviatsionnaya Tekhnika, No 2, 1970, pp 39-41

Abstract: For calculating the parameters of a nonisobaric cylindrical combustion chamber in a liquid propellant engine an approximate method is proposed which uses tables of thermodynamic characteristics for an isobaric engine. A comparison of the results of strict computation by a previously proposed method developed by the authors with the results of computation by the approximate method proposed in this paper showed that the approximate method is entirely suitable for engineering calculations. The authors thank G. B. Nudel'man for making the comparative calculations.

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Instrumentation and Equipment

USSR

UDC: 620.17:62-416

UMANSKIY, E. S., Engineer, SVIRIDOVSKIY, Yu. M., Engineer, ALESYUK, M. M., Engineer, KARPINOS, D. M., Engineer, KADYROV, V. Kh., Engineer, Institute of Problems of Strength, Academy of Sciences UkrSSR

"An Installation for Studying the Mechanical Properties of Metal Foil Materials"

Kiev, Tekhnologiya i Organizatsiya Proizvodstva, No 4, Jul/Aug 72, pp 108-109

Abstract: The paper describes an installation for studying the strength and deformability characteristics of foils and fibers over a wide temperature range. The device is basically a water-cooled vacuum chamber mounted on a special table. A control panel is provided with instrumentation for various kinds of tests. A vacuum of 10^{-6}-10^{-5} mm Hg ($1.33 \cdot 10^{-4}$-$1.33 \cdot 10^{-3}$ $N \cdot m^{-2}$) is produced by the exhaust system. Micromechanical tests are done on a precision breaking machine with maximum breaking force of 250 kgf (2450 N). A diagram of the unit is given and its operation is described. Test results are given for the mechanical properties of aluminum foil of two different thicknesses as a function of temperature.

1/1

Instrumentation and Equipment

USSR UDC 539.61:620.17.05

ALEKSYUK, M. M., Institute of Problems of Strength, Academy of Sciences Ukr SSR

"Units for Investigating the Adhesion Bonding Strength Between Pairs of Dissimilar Materials Forming Composites"

Moscow, Zavodskaya Laboratoriya, Vol 39, No 6, Jun 73, pp 743-747

Abstract: Two methods are used at the Institute of Problems of Strength to study the bonding strength between the elements of a composite material. Two testing units have been developed which are both based on a standard TsD-10 unit, equipped with standard control, measuring, and recording instruments. The first method uses a metallic dowel of one material inserted into a disk of another material forming a composite. The second method involves two annular metallic rings of dissimilar metals pressed together with the adhesion bonding strength tested by torsion of one ring relative to the other. 5 figures.

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ALEKSINA, L. A.

UDC: 611.132.2.014.47-064

THE EFFECT OF HYPOKINESIA AND HYPODYNAMIA ON INTRAORGANIC CARDIAC ARTERIES

[Article by L.A. Aleksina, Chair of Normal Anatomy (headed by Professor M.G. Prives, Honored Scientist), First Leningrad "Order of Red Banner of Labor" Medical Institute imeni Academician I.P. Pavlov; Leningrad, Arkhiv Anatomii, Gistologii i Embriologii, Russian, No 11, 1971, submitted 21 April 1971, pp 92-95]

Many works by foreign and Soviet authors deal with investigation of the cardiovascular system as related to hypokinesia and hypodynamia (Yu.V. Vanyushina, 1963; P.V. Buyanov et al., 1966; V.S. Georgiyevskiy et al., 1967; Yu.V. Latova, 1967; Torphy, 1966; Vogt, Mack, Jonson, 1966; Vogt, Jonson, 1967, and others). However, the vast majority of these works deal with changes in function of the cardiovascular system. As for morphological studies, there are very few. Thus, appearance of necrotic foci in the rat's myocardium following immobilization for 24 hours was observed by Renaud (1959). Myocardial lesion and development of atherosclerotic changes related to physical inactivity of man were observed by Raab, Silva, Marchet, Kimura, Starcreska (1960). I.K. Krasnykh (1969) established that there is a decrease in size of the heart in humans after 70-75 days of hypokinesia.

In view of the great significance of hypodynamia and hypokinesia as a factor that has a deleterious effect on the human body, as well as the sparsity of morphological studies in this field, a systematic investigation of the effect of hypodynamia and hypokinesia on the organism and systems of the organism is in progress at the chair of normal anatomy of the First Leningrad Medical Institute, under the leadership of Professor M.G. Prives; it began in [illegible].

The present investigation is merely the first part of a study of the effect of hypodynamia and hypokinesia on cardiac arteries.

The hearts of 20 rabbits, five of which were controls and 15 of which were kept in small cages, served as our material. Motor activity was markedly restricted. Hypokinesia lasted for 2-12 weeks.

2/2 016 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0043119

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONSTRUCTIVE AND TECHNOLOGICAL FEATURES OF THE STELLARATOR "URAGAN" AND EXPERIMENTAL APPARATUS FOR HIGH TEMPERATURE PLASMA CONFINEMENT RESEARCH ARE DESCRIBED.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--090CT70

TITLE--EXPERIMENTAL THERMONUCLEAR DEVICE URAGAN -U-

AUTHOR-(03)-ALEKSIN, V.F., BIRYUKOV, O.V., GEORGYEVSKIY, A.V.

COUNTRY OF INFO--USSR

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CIRC ACCESSION NO--AP0048119

UNCLASSIFIED

USSR

ALEKSIN, V. F., et al., Atomnaya Energiya, Vol 28, No 1, Jan 70, pp 22-28

H_0 (35 and 10 koe respectively). The stellarator is in the shape of a racetrack and uses a high-shear triplex helical field. The vacuum chamber of the trap consists of two semi-tori with an average radius R = 1100 mm and two rectilinear sectors, each 1725 mm long. The internal diameter of the chamber is 200 mm. On the outside of the chamber on the toroidal sectors are two helical windings and longitudinal magnetic field coils, distributed evenly along the device. The maximum strength of the magnetic field is 10 koe under steady-state conditions and 35 koe under pulsed conditions. Three windings are used; viz., longitudinal magnetic field, helical, and transverse magnetic field. All metallic elements are made of low-magnet steel 1Kh18N9T. The toroidal sectors of the vacuum chamber and part of the rectilinear sectors are made of stainless nonmagnetic alloy EP-125. The article gives a detailed description of the windings, cooling system, electric power supply system, vacuum system, and plasma diagnostic and heating system.

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USSR

ALEKSIN, V. F., et al., Atomnaya Energiya, Vol 28, No 1, Jan 70, pp 22-28

Institute of the Academy of Sciences Ukrainian SSR under the direction of K. D. SINEL'NIKOV, who took an active part in the solution of theoretical and technical questions. Organizations taking part in the development of the project and the construction of the complex included the Scientific Research Institute of Electrophysical Equipment imeni D. V. Yefremov, the Elektrosila Electrical Engineering Combine, the Khar'kov Polytechnic Institute imeni V. I. Lenin, the Electromechanical Plant and NIIElektroapparat [Scientific Research Institute of Electrical Equipment] in Khar'kov. A considerable amount of work on the development, manufacture, and adjustment of the systems and components of the "Uragan" was done at the Physicotechnical Institute of the Academy of Sciences Ukrainian SSR.

The principal feature of the "Uragan" is high shear (of the order of 0.02 and 0.1) at a high level of magnetic field strength

USSR

A

UDC 621.039.623

ALEKSIN, V. F., BIRYUKOV, O. V., GEORGIYEVSKIY, A. V., KITAYEVSKIY, L. KH., KOMAR, YE. G., LUGINOV, A. S., MALYSHEV, I. F., MOROZOV, N. A., POPKOVICH, A. V., ROZHDESTVENSKIY, B. V., SAKSAGANSKIY, G. L., SINEL'NIKOV, the late K. D., SOKOLOV, YU. A., SUPRUNENKO, V. A., TOLOK, V. T., CHURAKOV, G. F., and SHABEL'NIKOV, L. A.

"The Experimental Thermonuclear Device 'Uragan'"

Moscow, Atomnaya Energiya, Vol 28, No 1, Jan 70, pp 22-28

Abstract: An urgent task of stellarator research is a definitive elucidation of the reasons for anomalous diffusion in a stellarator, as well as the effect of the shear and magnetic well on the confinement of a hot and dense plasma. These questions will be studied on the "Uragan" stellarator. Construction of the "Uragan" stellarator was begun at the suggestion of I. V. KURCHATOV and completed in 1967. The physical substantiation and technical assignment of developing and constructing the complex were developed at the Physicotechnical

USSR

ALEKSIN, V. F., Zhurnal Tekhnicheskoy Fiziki; September 1972, pp 1861-8

made easier by the existence of the identity $\int d\ell/H = \int dz/H_z$ and leads, in fact, to the measurement of the cartogram of H_z of the longitudinal component of the helical field and the main longitudinal field H_0 only at one or several cross sections $z = const$.

Two methods were used in the work to increase the accuracy of measurement of the distribution of H_z in space: the differential-ballistic and the differential-induction. With the first it is possible to measure a minimum difference between the magnetic fields of ~ 1 gauss; with the second method, a minimum difference of ~ 10^{-2} gauss.

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USSR

ALEKSIN, V. F.; et al (Physicotechnical Institute of the Ukrainian Academy of Sciences, Khar'kov)

"Method of Experimental Determination of the Depth of a Magnetic Well in Stellarator-Type Systems"

Leningrad, Zhurnal Tekhnicheskoy Fiziki; September, 1972; pp 1861-8

ABSTRACT: The article concerns a method of the experimental determination of the average minimum of a magnetic field in plasma traps with complex magnetic fields of the stellarator, helitron, and asymmetric stellarator types. The method is based on the presence of a helical and "quasi-helical" symmetry in such systems and makes it possible to measure the depth of a magnetic well down to the separatrix in rectilinear and nontwisted toroidal traps.

To measure the magnetic well (i.e., $\int dl/H$) it is necessary to determine the shape of the magnetic surface and the behavior of the lines of force on it. The presence of an helical or quasi-helical symmetry makes it possible to do this. Furthermore, it is necessary to know the cartogram of the magnetic field in the space bounded by the separatrix. The solution of the latter problem is

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USSR UDC 533.916

ALEKSIN, V. F., SHISHKIN, A. A.

"Plasma Equilibrium in a Heliotron"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb. (Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No. 3, pp 141-147 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G163)

Translation: The equilibrium of a low-pressure plasma in a heliotron is investigated. The heliotron consists of a trap of the stellarator type, the magnetic configuration of which is developed by a large longitudinal field, a field of helical windings, and a field of axial current. An expression is obtained on the basis of the magnetohydrodynamic equation for the equilibrium value of the plasma pressure as a function of the parameters of the heliotron.

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USSR

UDC 533.92:621.039.61

ALEKSIN, V. E., ROMANOV, S. S., SEBKO, V. P., and LOKTIONOV, Yu. M.

"Magnetic Configurations With Sheer and Minimum $\overline{B}$"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb. (Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No 3, pp 113-125 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G277)

Translation: Magnetic configurations of one-, two- and three-slope helical fields (n = 1, 2, 3) with an axial current were investigated. Particular attention was given to the properties of rotational conversion of magnetic lines of force and to the minimum average magnetic field. The relationship between the magnetic well and sheer and the characteristics of the structure of each configuration was established. Numerical values are given for the sheer for each magnetic system (n = 1, 2, 3).

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USSR

ALEKSIN, V. F., et al, Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb., 1972, No. 3, pp 73-112

individually controlled cylinders there are closed magnetic surfaces with high sheer values (~0.09) and angle of rotational conversion (~240°). The experimental data are compared with calculated values obtained on the BESM-6 computer.

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USSR

UDC 533.92:621.039.61

ALEKSIN, V. F., BIRYUKOV, O. V., VISHNEVETSKIY, V. N., GEORGIYEVSKIY, A. V., GROT, Yu. I., DIKIY, A. G., ZISER, V. Ye., KITAYEVSKIY, L. Kh., KONOTOP, P. I., POGOZHEV, D. P., PELETMINSKAYA, V. G., SERGEYEV, Yu. F., SMIRNOV, V. G., SUPRUNENKO, V. A., TOLOK, V. T., TARAN, V. M.

"Development and Production of the Magnetic System of the 'Uragan' Stellarator and a Study of Magnetic Surfaces With Large Sheer"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb. (Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No. 3, pp 73-112 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G279)

Translation: This paper concerns the study of the magnetic system of the three-loop "Uragan" stellarator-racetrack. Considerations concerning the selection of optimal parameters of the magnetic system of the stellarator are discussed. The equipment of the "Uragan" is briefly described. An experimental study of the magnetic surfaces made with the aid of low-energy electron beams showed that in the "Uragan" stellarator-racetrack with

USSR UDC 533.951.7/.8

ALEKSIN, V. F., BIRYUKOV, O. V., et. al., Fiz. Plazmy i Probl. Upravl. Termoyader. Sinteza. Resp. Mezhved. Sb., No 3, 1972, pp 73-112.

(≈240°). The experimental data are compared with calculated data produced on the BESM-6 computer. 51 Biblio. Refs.

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USSR

UDC 533.951.7/.8

ALEKSIN, V. F., BIRYUKOV, O. V., VISHNEVETSKIY, V. N., GEORGIYEVSKIY, A. V., GROT, Yu. I., DIKIY, A. G., ZISER, V. Ye., KITAYEVSKIY, L. Kh., KONOTOP, P. I., POGOZHEV, D. P., PELETMINSKAYA, V. G., SERGEYEV, Yu. F., SMIRNOV, V. G., SUPRUNENKO, V. A., TOLOK, V. T., TARAN, V. M.

"Development and Creation of the "Uragan" Stellarator Magnetic System and Study of High-Shear Magnetic Surfaces"

Fiz. Plazmy i Probl. Upravl. Termoyader. Sinteza. Resp. Mezhved. Sb. [Plasma Physics and Problems of Controlled Thermonuclear Synthesis. Republic Interdepartmental Collection], No 3, 1972, pp 73-112, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B178 by the author's).

Translation: This work is dedicated to the study of the magnetic system of the three-pass "Uragan" stellarator. A report is presented on the selection of the optimal parameters of the magnetic system of the stellarator. The "Uragan" complex is briefly described. Experimental studies of magnetic surfaces using low-energy electron beams have shown that the "Uragan" stellarator with individually controllable cylinders produces closed magnetic surfaces with high shear values (≈0.09) and high rotary conversion angle

USSR

ALEKSIN, V. F., et al., Fizika Plasmy i Problemy Upravlyayemogo Termoyadernogo Sinteza, "Naukova dumka," No 3, 1972, pp 73-112

the results are given of an investigation into the instrument's magnetic surfaces. Computations worked out on an electronic computer for the design of the magnetic system are described, and differences between the "Uragan" and the "Sirius" stellarators are indicated. A comparative table of the parameters for various types of stellarator is given; it shows that the "Uragan" is one of the more powerful thermonuclear machines, with a high shear value for its substantial 10 koersted magnetic field intensity. This article is liberally illustrated with photographs and line drawings and has a bibliography of 51 titles.

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USSR

UDC 533.92:621.039.61

ALEKSIN, V. F., BIRYUKOV, O. V., VISHNEVETSKIY, V. N., GEORGIYEVSKIY, A. V., GROT, Yu. I., DIKIY, A. G., ZISER, V. Ye., KITAYEVSKIY, L. KH., KONOTOP, P. I., POGOZHEV, D. P., PELETMINSKAYA, V. G., SERGEYEV, Yu. F., SMIRNOV, V. G., SUPRUNENKO, V. A., TOLOK, V. T., and TARAN, V. M.

"Development and Synthesis of the "Uragan" Stellarator and Investigation of Magnetic Surfaces of High Shear"

Kiev, Fizika Plasmy i Problemy Upravlyayemogo Termoyadernogo Sinteza (Plasma Physics and Problems in Controlled Thermonuclear Synthesis -- collection of works) "Naukova dumka," No 3, 1972, pp 73-112

Abstract: After an initial section devoted to a review of the literature on the magnetic surfaces of toroidal stellarators and the principles of stellarators in general, the authors analyze the "Uragan" specifically. In particular, this paper is concerned with the problems involved in choosing the parameters of the magnetic system for the racetrack stellarator to obtain magnetic surfaces with high shear. This last term is defined as the extent of crossing of the magnetic lines of force. The synthesis and adjustment of the magnetic system are also examined, and

USSR

ALEKSIDZE, N. G., et al., Soobshcheniya Akademii Nauk Grizinskoy SSR, No 3, 1971, pp 693-695

peritoneal injection of iproniazid.

The behavior of animals will have to be studied under conditions of differential inhibition of cholinesterase and MAO in order to determine the part played by the biogenic amines and acetycholine in memory phenomena.

USSR

ALEKSIDZE, N. G., et al., Soobshcheniya Akademii Nauk Grizinskoy SSR, No 3, 1971, pp 693-695

open door in the labyrinth was impaired - 5.30 points (62.3%) out of 10. Iproniazid had no effect on the latent period or motor responses of the rats. MAO activity decreased both in the cortex and in the substantia alba of the subcortex. The drug had a more powerful inhibitory effect on the cortex, specifically, the frontal and parietal regions. The inhibition of MAO activity in the subcortical structures was less pronounced and iproniazid had no significant effect on MAO activity in the occipital region.

In the next series of experiments, the effect of iproniazid on cholinesterase activity in cortical and subcortical homogenates was studied. Intraperitoneal injection of the compound inhibited MAO and cholinesterase activities at the same time. Here, unlike MAO, cholinesterase activity decreased significantly only in the substantia alba of the subcortical structures.

Thus, in evaluating the effect of iproniazid on nervous tissue, one must also take inot account its effect on the acetylcholine-cholinesterase system.

The experimental data presented above suggest that both the MAO and acetycholine-cholinesterase systems are involved in the mechanism responsible for impairing the psychoneural behavior of rats in a labyrinth after intra-

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USSR

ALEKSIDZE, N. G., et al., Soobshcheniya Akademii Nauk Grizinskoy SSR, No 3, 1971, pp 693-695

does the exclusion of one of the enzymes depress another system through intermediate metabolites?

This report presents data concerning the effect of iproniazid on cholinesterase MAO, and psychoneural behavior of white rats. The animals weighed 80 to 100 g. Their psychoneural behavior was studied by the method of unrestrained behavior in a T labyrinth according to a method previously described. MAO activity was determined by the spectrophotometric method modified for microassays.

Cholinestrase activity was studied by YELLman's micromethod. To determine MAO and cholinesterase activities (in vivo experiments), 1 mg of tissue was taken from each of the following: motor analysor from the P_p field of the frontal region, parietal region consisting of parts PA^s and PA^m, visual analysor, and occipital cortex, and corresponding subcortical substantial alba. Iproniazid was injected intraperitoneally (4 mg/kg in physiological saline) and the rats' behavior and enzymatic activity were investigated one hour later.

In the first series of experiments, the effect of the MAO inhibitor on the animals' behavior in a T labyrinth was studied. After intraperitoneal injection of iproniazid, the rats' ability to remember the location of the

USSR

UDC 612-019

ALEKSIDZE, N. G., BELETSKAYA, R. P., and MESHVELISHVILI, D. F., Tbilisi State University

"Effect of Iproniazid (Sprazid) on Monoamine Oxidase and Cholinesterase Activities and Psychoneural Behavior of Rats"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, No 3, 1971, pp 693-695

Translation: The biogenic amines and the enzyme monoamine oxidase (MAO) are now attracting attention because this system is involved in several kinds of psychic disorders and behavior of animals. The administration of the MAO inhibitor iproniazid, serotonin or its precursor 5-hydroxytryptophan separately or against a background of MAO inhibition is known to disrupt the conditioned activity of different animal species. On the other hand, there are references in the literature to the fact that the memory of animals deteriorates after the inhibition of brain cholinesterase. It was also found that conditioned activity and psychoneural behavior are disrupted by inhibition of both MAO and cholinesterase.

In the light of the foregoing, it was deemed worthwhile to study the interrelationships and role of individual systems, acetylcholine, and biogenic amines in animal behavior. Are they elements of a single system or

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UDC 612.8.015+577.15

USSR

ALEKSIDZE, N. G., and BALAVADZE, M. V., Tbilisi State University

"Change in Acetylcholinesterase Activity in Specific Regions of the Rat Cerebral Cortex After Training"

Moscow, Doklady Akademii Nauk, SSSR, Vol 198, No 6, Jun 71, pp 1,455-1,456

Abstract: Acetylcholinesterase (ACE) activity was investigated in one half of the rat cortex while the other half served as the control. This was done in order to eliminate the effect of individual differences, general activity of the animal, and stress on ACE activity. The animals were trained to carry food with an unfavored paw. The cortex contralateral to this paw reflected "training" while the other, the mirror part, was the control. The occipital cortex served as a general control After six days' training ACE activity in region contralateral to the paw used increased by 20% and after 14 days' training by 32%. Meanwhile ACE activity in the occipital cortex of both hemispheres scarcely changed (an increase of 2.5 to 9%). In another series of experiments lasting six days in which the animals carried food with the favored paw, ACE activity tended to increase in the cortical region opposite the paw used (+10%), but not in the occipital region.

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USSR

ALAKSIDZE, N. G., et al., Soobshcheniya Akademii Nauk Gruzinskoy SSR, No 1, 1972, pp 193-195

glial cells. It should be noted that transamine does not affect acetylcholinesterase activity in the various regions of the rat brain.
Disruption of the behavior of rats in the labyrinth coincided temporally with inhibition of MAO activity. However, 48 hours after the injection of transamine, behavior of rats returned to normal while MAO remained inhibited. In summary, in these experiments with transamine it was not possible to demonstrate a correlation between psychoneurologic behavior and the level of MAO activity in the various areas of the cortex and subcortical white matter of the rat brain.

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USSR

ALEKSIDZE, N. G., et al., Soobshcheniya Akademii Nauk Gruzinskoy SSR, No 1, 1972, pp 193-195

approximately 40 minutes after intraperitoneal injection of transamine, psychoneurologic behavior of rats deteriorated from 9.17 to 5.30 points, a decrease to 58% of control values. By the second day the memory of the rats had improved but remained significantly depressed at 8.25 points (p greater than .001). Forty-eight hours after the injection of transamine, the ability of rats to solve the labyrinth was essentially normal (8.70; p less than 0.5). In parallel with our studies of the behavior of rats in the labyrinth, we investigated the dynamic activity of MAO in various areas of the cortex and subcortical white matter of the brain. It was discovered that 40 minutes after intraperitoneal injection of transamine, MAO activity is sharply inhibited in all areas of the brain that were studied. Mao remained inhibited in the 24 hour measurement. The degree of inhibition in the cortical and subcortical areas was practically identical at 40 minutes and 24 hours after the injection of transamine. After 48 hours a tendency toward restoration of Mao activity was noted. It is interesting to note that at 72 hours there is significant restoration of MAO activity in the white matter of the frontal, parietal and occipital areas -- tissue composed of primarily glial cells. It is possible that this recovery is one of the characteristics of the laminar coverage of neurons with

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USSR

ALEKSIDZE, N. G., MESHVELISHVILI, D. F., and BELETSKAYA, R. P., Tiblisi State University

"The Effect of Transamine on Monoamineoxidase Activity and Psychoneurologic Behavior of Rats in a Labyrinth"

Tiblisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, No 1, 1972, pp 193-195

Abstract: Data are found in the literature indicating that biogenic amines It was of interest therefore, to study the effect of transamine, an inhibitor of MAO, on the psychoneurologic behavior of rats in relationship to the duration and degree of MAO inhibition, Psychoneurologic behavior was studied by the method of free actions in a T labyrinth. The rats were required to remember the location of an open door on the left or the right branch of the labyrinth. and enzymes participating in their metabolism are involved in the memory process. Unfortunately most studies lack an analysis of the interrelationships of animal behavior and enzyme activity. Furthermore, when considering the inhibitory properties of transamine, the activity of monoamineoxidase, MAO, is often not determined.

MAO activity was determined with the spectrophotometer -- acetylcholinesterase activity by the method of Ellman et al.

USSR UDC 778.86

ALEKSIDZE, M. A., and KOCHLADZE, O. SH., Academy of Sciences Georgian SSR, Computer Center

"Criminalistic Examination of Photographs"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 61, No 3, Mar 71, pp 557-560

Abstract: The article describes a method for analytic determination of the congruence of a photograph based on the assumption that the human face possesses a number of points related to the structure of the skull and that these points retain their strictly defined arrangement throughout a person's life. These points are called constant points. The parameters of congruent transformation can be found by attempting to bring two pairs of constant points into coincidence or by the least-squares method.

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USSR

UDC 621.382:538.632

ALEKSIDZE, M.A., BEZHANOV, V.G., VINNIKOV, I.L., SVANIDZE, I.V.

"Solution Of Some Boundary Problems During Calculation Of Resistance Of Hall Element"

Tr. In-t sistem upr. AN GruzSSR (Works Of The Institute Of Control Systems. Academy Of Sciences, Georgian SSR), 1971, 10, No 2, pp 47-57 (From RZ:Elektronika i yeye primeneniye, No 7, July 1972, Abstract No 7B[illegible])

Translation: A calculation is made of the input and output resistance of a Hall element of right-angled form, the metal current electrodes of which have an ohmic non-injecting contact with a semiconductor wafer [plastina] over all of its length, and metal Hall electrodes -- the same contact with the middle of the lateral faces of this wafer. Both pairs of contacts are realized over the total thickness of the semiconductor wafer. The results are presented in the form of graphs which makes it possible to select (from the point of view of the maximum energy index of the Hall element) the optimum ratio for the sides of the semiconductor wafer and the dimensions of the Hall electrodes. Yu.P.

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